

WHAT IS CLAIMED IS

1. A semiconductor device having a short circuit or a spare circuit for preventing application of a high voltage to a load circuit,
5 comprising;

a substrate;

a first interconnection formed on said substrate and connected to the short circuit or the spare circuit;

a first dielectric film for covering said first
10 interconnection;

an opening section for extending from a surface of the first dielectric film to said first interconnection, said opening section being formed in said first dielectric film;

a plug formed in said opening section and electrically connected
15 to said first interconnection;

a second interconnection formed on said plug by way of a predetermined void and connected to the load circuit; and

a second dielectric film for covering said second interconnection.
20

2. The semiconductor device according to claim 1,

wherein said second interconnection has a barrier metal layer and an aluminum interconnection formed on the barrier metal layer, and
25

the void is formed by means of removing an upper portion of said plug and the barrier metal layer formed on the upper portion of said plug.

3. The semiconductor device according to claim 2, wherein the
30 void is formed by means of further removing a lower portion of the aluminum interconnection formed above said plug.

4. The semiconductor device according to claim 1, wherein said

second interconnection has a barrier metal layer and an aluminum interconnection formed on the barrier metal layer, and

the void is formed by means of removing the barrier metal layer formed on said plug.

5

5. The semiconductor device according to claim 1, wherein said second interconnection has a barrier metal layer and an aluminum interconnection formed on the barrier metal layer, and

the void is formed by means of removing an upper portion of said plug.

10

6. A semiconductor device having a short circuit or a spare circuit for preventing application of a high voltage to a load circuit, comprising:

15

a substrate;

a first interconnection formed on said substrate and connected to the short circuit or the spare circuit;

a first dielectric film for covering said first interconnection;

20

an opening section for extending from a surface of said first dielectric film to said first interconnection, said opening section being formed in said first dielectric film;

a plug formed in said opening section and electrically connected to said first interconnection;

25

a second interconnection formed on said first dielectric film in the vicinity of said plug and connected to the load circuit; and

a second dielectric film having a predetermined void located at a position adjacent to said second interconnection and at a position above said plug, said second dielectric film covering said second interconnection.

30

7. The semiconductor device according to claim 6, wherein said second interconnection is formed so as to become narrow in the vicinity

of said plug.

8. The semiconductor device according to claim 1, wherein when a predetermined voltage is applied to said second interconnection, electromigration arises in said second interconnection, thereby establishing connection between said second interconnection and said plug.

9. The semiconductor device according to claim 2, wherein when a predetermined voltage is applied to said second interconnection, electromigration arises in said second interconnection, thereby establishing connection between said second interconnection and said plug.

10. The semiconductor device according to claim 3, wherein when a predetermined voltage is applied to said second interconnection, electromigration arises in said second interconnection, thereby establishing connection between said second interconnection and said plug.

11. The semiconductor device according to claim 4, wherein when a predetermined voltage is applied to said second interconnection, electromigration arises in said second interconnection, thereby establishing connection between said second interconnection and said plug.

12. The semiconductor device according to claim 5, wherein when a predetermined voltage is applied to said second interconnection, electromigration arises in said second interconnection, thereby establishing connection between said second interconnection and said plug.

13. The semiconductor device according to claim 6, wherein

when a predetermined voltage is applied to said second interconnection, electromigration arises in said second interconnection, thereby establishing connection between said second interconnection and said plug.

5

14. The semiconductor device according to claim 7, wherein when a predetermined voltage is applied to said second interconnection, electromigration arises in said second interconnection, thereby establishing connection between said second interconnection and said plug.

10

15. A semiconductor device having a short circuit or a spare circuit for preventing application of a high voltage to a load circuit, comprising:

15

a substrate;

a first dielectric film formed on said substrate and having an opening section;

a pad formed in the opening section and having conductivity;

a first interconnection formed on said first dielectric film

20

such that a portion of a bottom of said first interconnection comes into contact with an upper surface of said pad;

a second interconnection formed on said first dielectric film such that a bottom surface of said second interconnection does not come into contact with the upper surface of said pad, said second interconnection being connected to the load circuit, said pad being disposed between said first and second interconnections; and

25

a second dielectric film having a predetermined void located at a position on said pad, said second dielectric film covering said first and second interconnections.

30

16. The semiconductor device according to claim 15, wherein said second interconnection is formed so as to become narrow in the vicinity of said pad.

17. The semiconductor device according to claim 15, wherein
 when a predetermined voltage is applied to said second interconnection,
 electromigration arises in said second interconnection, thereby
 5 establishing connection between said second interconnection and said
 pad.

18. The semiconductor device according to claim 16, wherein
 when a predetermined voltage is applied to said second interconnection,
 10 electromigration arises in said second interconnection, thereby
 establishing connection between said second interconnection and said
 pad.